## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau



20 APR 2005

(43) International Publication Date 6 May 2004 (06.05.2004)

**PCT** 

(10) International Publication Number WO 2004/037175 A2

(51) International Patent Classification<sup>7</sup>:

**A61K** 

(21) International Application Number:

PCT/US2003/032705

(22) International Filing Date: 16 October 2003 (16.10.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/420,068 60/471,481 21 October 2002 (21.10.2002) US 15 May 2003 (15.05.2003) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US Filed on 60/471,481 (CON) 15 May 2003 (15.05.2003)

US

60/420,068 (CON)

Filed on

21 October 2002 (21.10.2002)

(71) Applicant (for all designated States except US): ZYCOS INC. [US/US]; 44 Hartwell Avenue, Lexington, MA 02421 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BEACH, Kathleen [US/US]; 399 Henry Street, Amherst, MA 01002 (US).

HEDLEY, Mary, Lynne [US/US]; 51 Follen Road, Lexington, MA 02421 (US). URBAN, Robert, G. [US/US]; 51 Follen Road, Lexington, MA 02421 (US).

- (74) Agent: BRENNAN, Jack; Fish & Richardson P.C., Suite 2800, 45 Rockefeller Plaza, New York, NY 10111 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

04/037175 A2

(54) Title: COMPOSITIONS AND METHODS FOR TREATING HUMAN PAPILLOMAVIRUS-MEDIATED DISEASE

(57) <u>Abstract</u>: The invention includes methods of treating an HPV-mediated disease by administration to an individual of a pharmaceutical composition comprising a nucleic acid that encodes a polypeptide comprising an epitope of a naturally occurring HPV protein. The methods include the selection of individuals for treatment with the composition according to the age of the recipient, as well as the use of the composition to elicit a cross-reactive anti-HPV immune response.